MICRO SEIKI

DD-40

OPERATING MANUAL

DD-40 Features

■ **Improved torque FG servo motor results in advanced drive characteristics.**

Superb stability of speed together with increased torque have been achieved by employing an FG servo motor. With this kind of motor, neither locations subject to temperature fluctuations nor current fluctuations in the AC line contribute to variations in the platter speed. Consequently a smooth stable speed, featuring a wow and flutter of less than 0.028%, is assured. In addition, this almost vibrationless unit achieves an S/N ratio of more than 62 dB.

■ **MA-505 dynamic balance tonearm for low tracking force.**

The MA-505, an ideal dynamic balance type tonearm, permits tracking force to be applied linearly during playback. The spring tracking force application system which allows linear tracking force adjustment between 0.25 – 3 grams, is totally uninfluenced by factors such as turntable location conditions or record pressings. Furthermore, at low tracking force settings the tracking is exceptionally stable, resulting in unsurpassed performance with high compliance cartridges.

■ **Precision spring and tungsten wire ensure long life and unchanging accuracy.**

The MA-505 tracking force application spring and tungsten wire ensure lasting quality without the deterioration problems typical of conventional dynamic tonearms.

Set at a tracking force of 3 g., the force applied to the spring is equal to 15 kg/mm^2. The MA-505's spring however, with a breaking point of 45 kg/mm^2 provides an ample reliability margin. Moreover the greatest force applied to the tungsten wire is 65 g.; but again, this wire is tested to 4.5 kg, a fact which eliminates snapping or stretching problems.

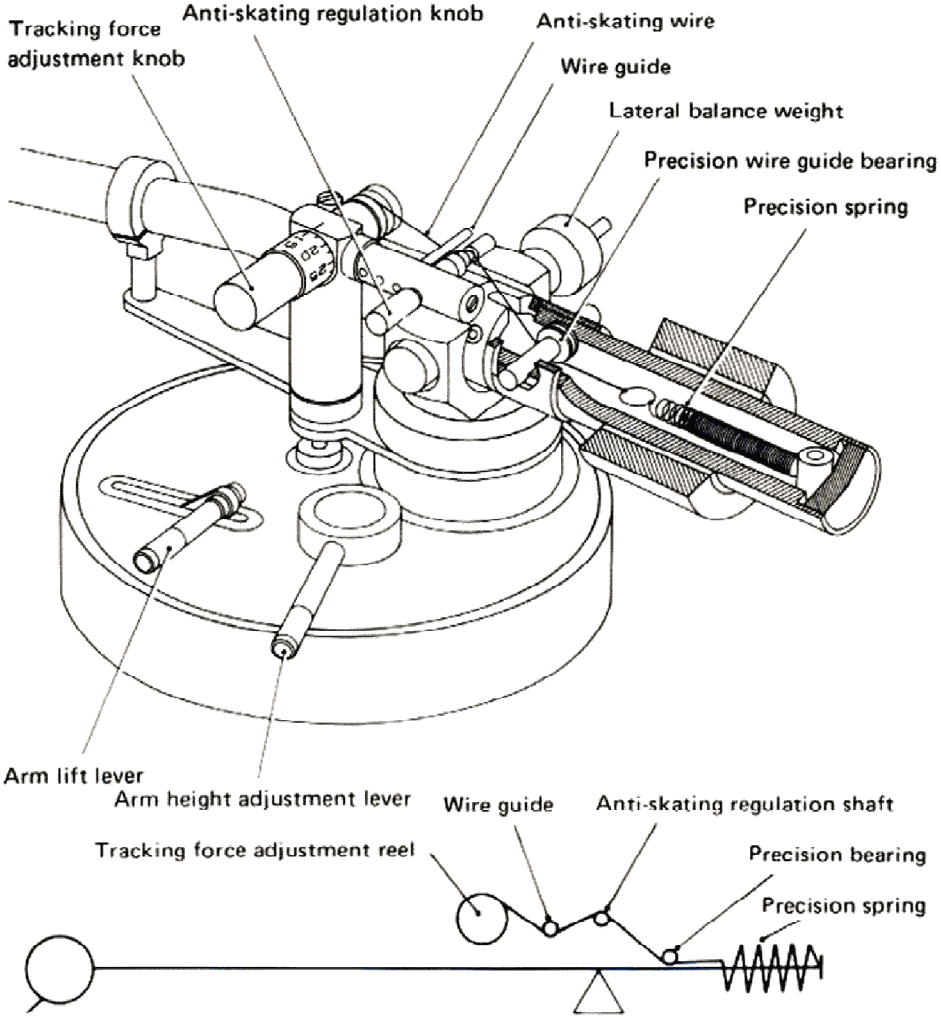
■ **MA-505 tonearm incorporates many revolutionary features.**

- **Tracking force adjustment mechanism.**
  The tracking force adjustment mechanism, independent of the tonearm rotation section, can even be regulated during playback. Thus a tracking force most suited to the listening room conditions can be selected.
- **Anti-skating device**
  This mechanism can be adjusted to suite different tracking forces or differing stylus configurations.
- **Arm height adjustment mechanism**
  The tonearm height can be adjusted easily by means of this mechanism which incorporates a spring built into the base.

■ **A solid King Rosewood base.**

The solid base, Palisander-Rose finished pressed-board, together with the large-size shock absorbers are designed to minimize 'acoustic feedback', and permit the finest possible sound quality.

● **MA-505 mechanism and principles of tracking force application**



Profile diagram Tracking force is applied by turning the tracking force adjustment knob, which in turn exerts tension on the tungsten wire and hence to the spring.

Parts nomenclature

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

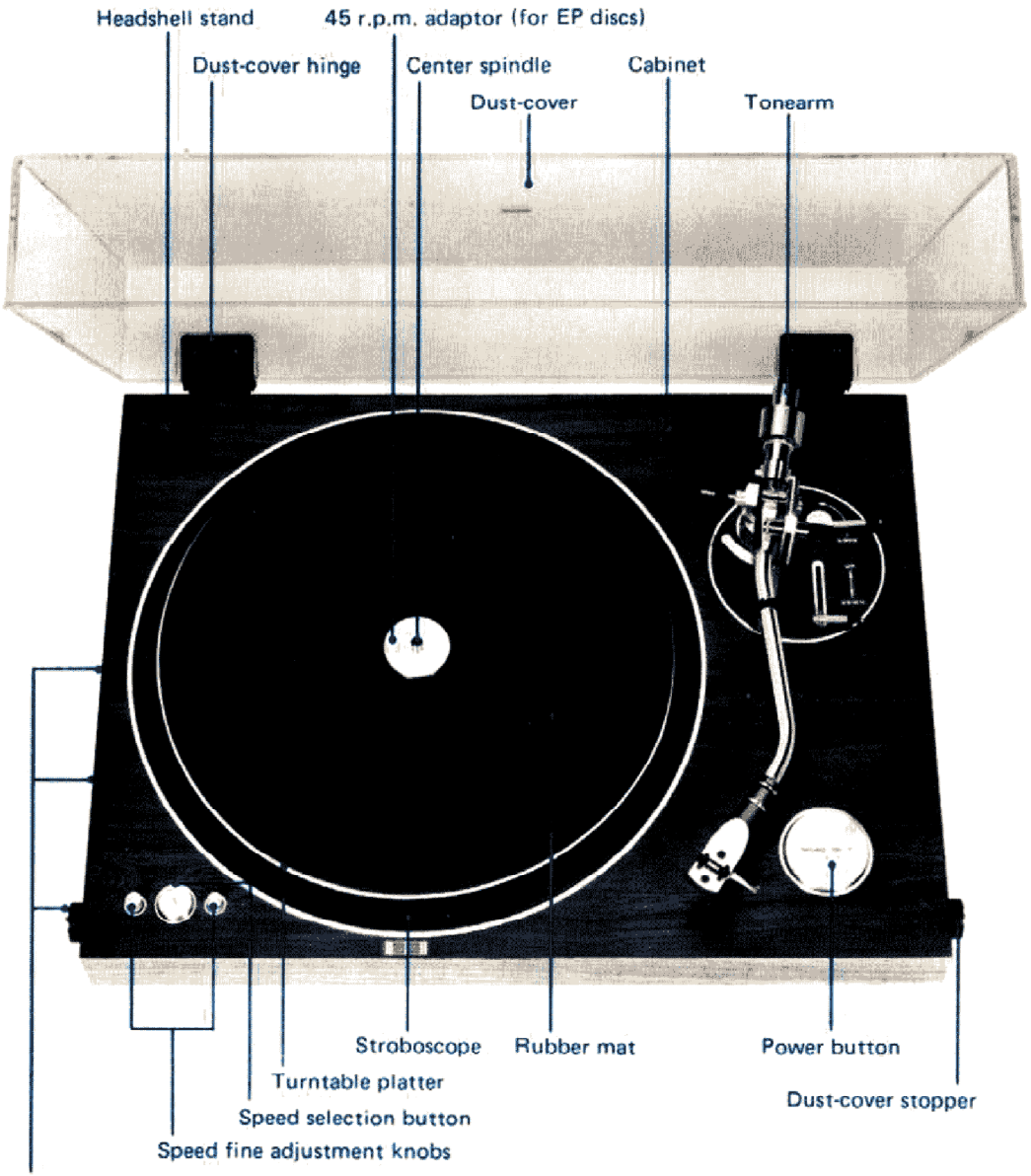


Photo 1

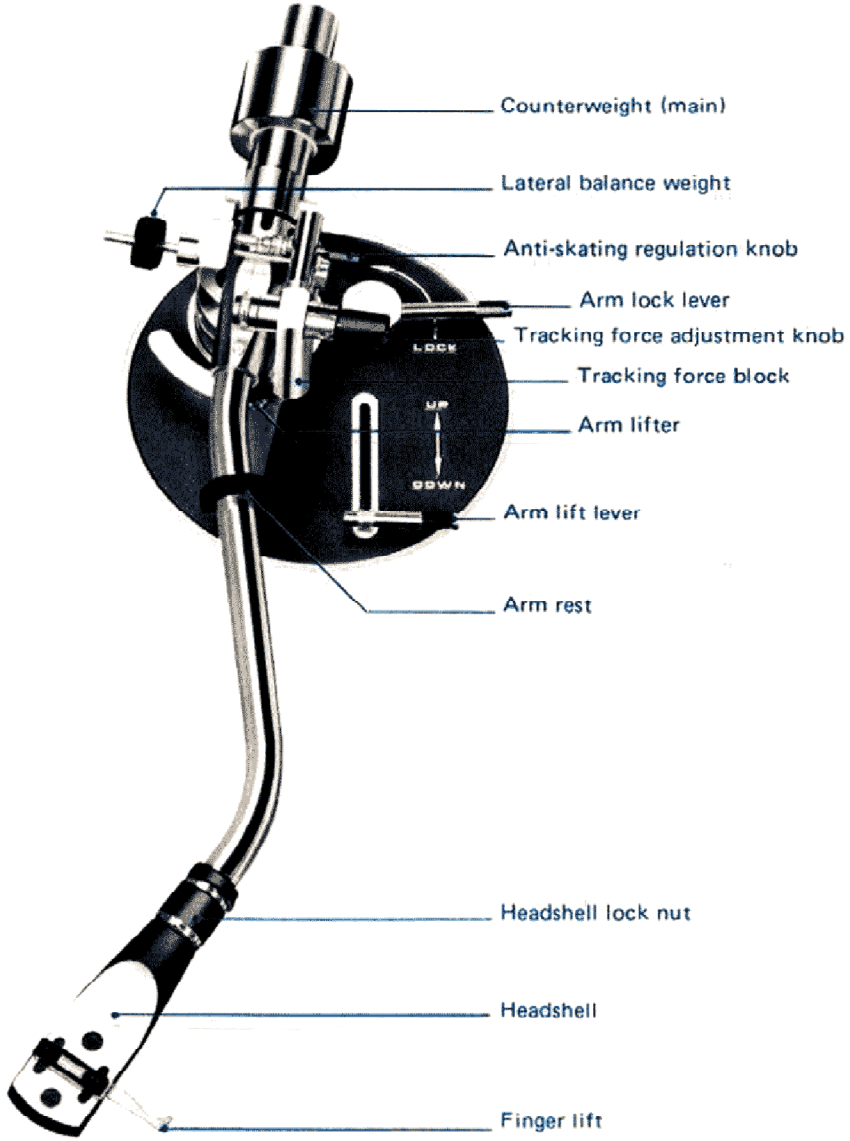


Photo 2

Before assembly

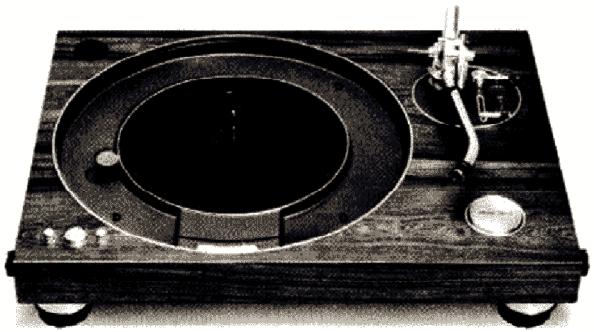


Photo 3

Before attempting assembly of your DD-40 turntable, check the parts supplied against this list.

1) Turntable platter
2) Rubber mat
3) Headshell
4) Counterweight (main)
5) Sub-weight
6) Lateral balance weight (large)
7) Lateral balancer (small)
8) Dust-cover
9) Screwdriver
10) 45 r.p.m. adaptor
11) Stylus brush
12) Overhang gauge
13) Output lead

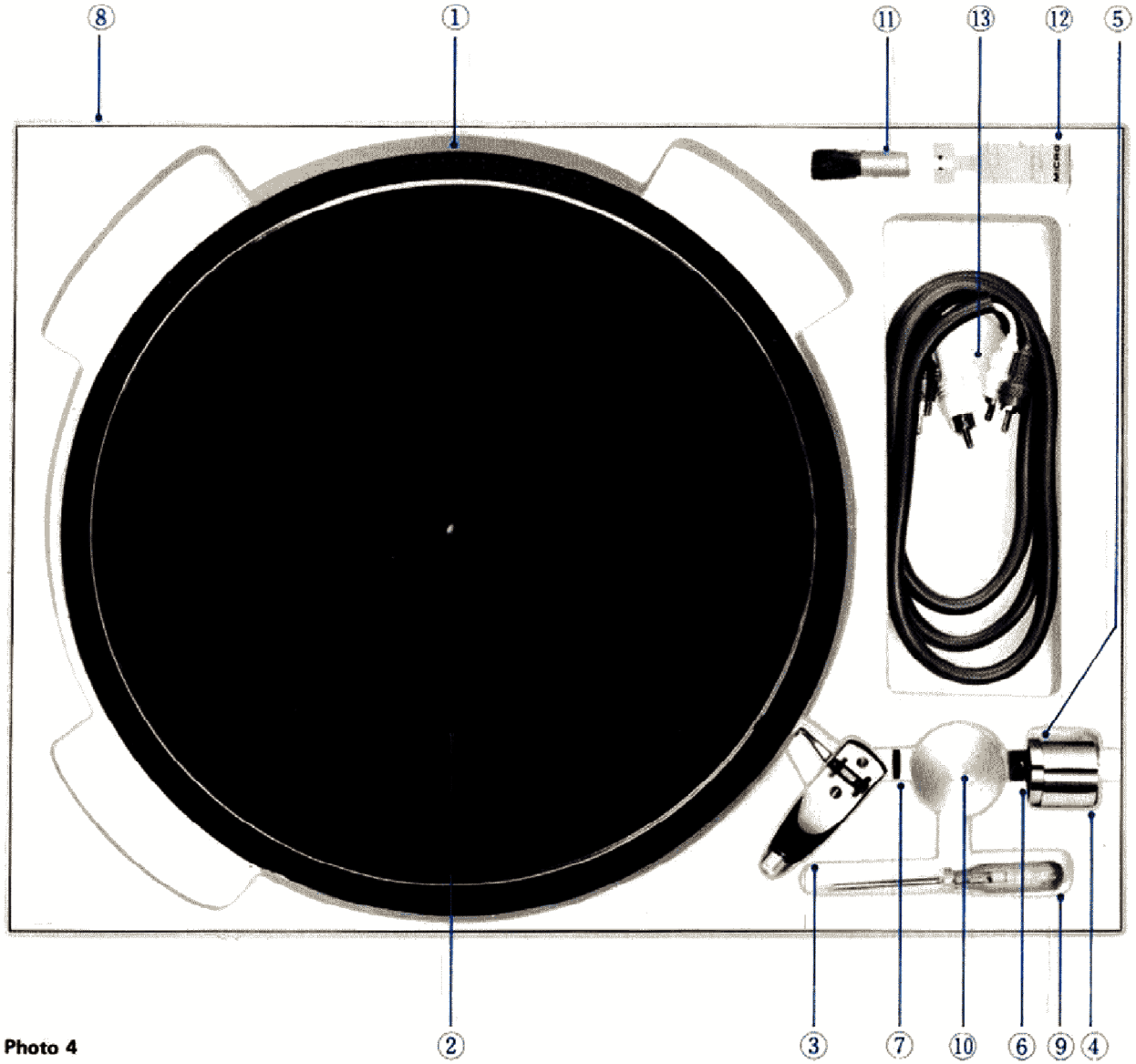


Photo 4

Turntable platter and tonearm assembly

Mount the platter on the center spindle and place the rubber mat on the platter.

- **Cartridge installation and adjustment**

1) Installation

A cartridge is not necessarily included at the time of purchase.

Following the method illustrated in fig. 1, install a cartridge using screws of a suitable length.

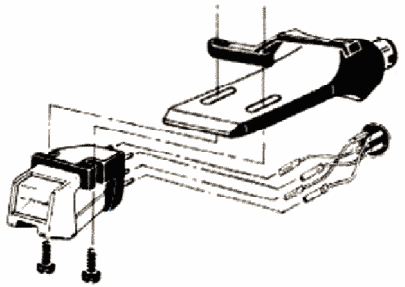


Fig. 1

2) Cartridge connection

Connect the headshell leads to the cartridge using tweezers as shown above. Take care to make the connections correctly, as error will lead to hum or output signal failure. The lead colors are as follows:

White	Left channel	(+)
Blue	Left channel	(–)
Red	Right channel	(+)
Green	Right channel	(–)

3) Overhang adjustment

Overhang is the distance between the center of the platter spindle and the stylus tip. The DD-40 is designed to operate with minimal tracking error when the overhang is adjusted to 15 mm. In order to adjust the cartridge correctly, place the enclosed overhang gauge over the headshell as shown in photo 5.

Loosen the cartridge securing screws and align the stylus to the ▼ marks on the gauge by moving the cartridge either forward or backward. When a different cartridge is installed in the headshell, be sure to re-adjust, using the method described above.

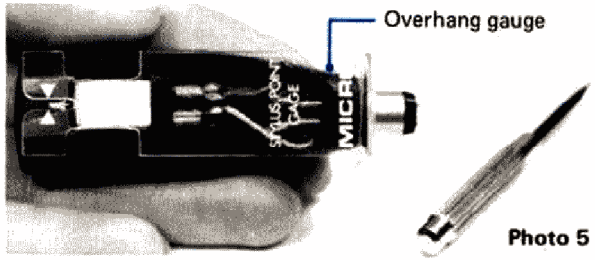


Photo 5

- **Tonearm assembly**

Secure the tonearm in the arm rest. Then plug the counterweight onto the end of the tonearm shaft, turning it in the direction shown by the arrow in photo 6.

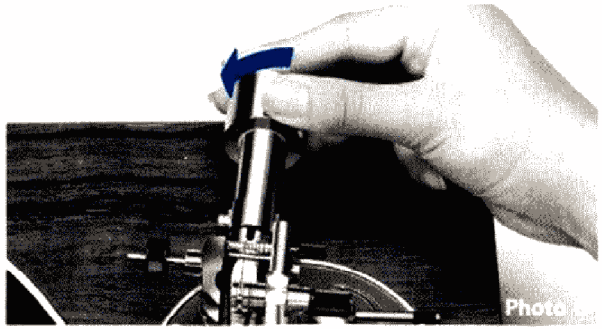


Photo 6

Next, without exerting undue pressure on the tonearm rotation section, insert the headshell into the front-end of the tonearm shaft and secure it by turning the lock nut.

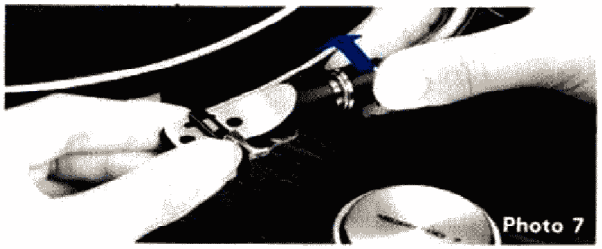


Photo 7

Toneam adjustment

1) Switch the power button to OFF (▟ OFF / ▁ ON)

2) Adjust the green dot on the tracking force adjustment knob scale to the tracking force level line as illustrated in photo 8. (Thus set, the tracking force is zero.)

3) Turn the anti-skate regulation knob in an anti-clockwise direction, as shown by the arrow, until it stops (photo 8).

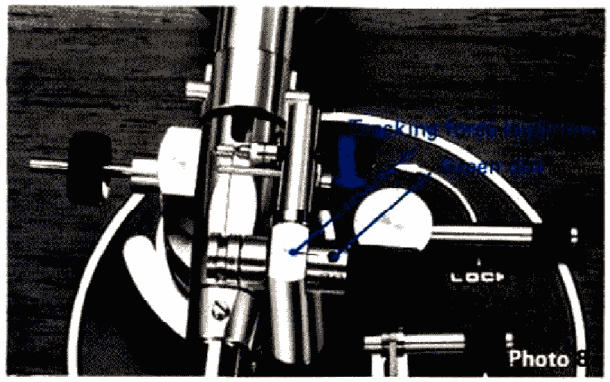


Photo 8

4) Lower the arm lift lever as pictured in photo 9, then release the tonearm from the arm rest.

The arm rest is provided with a locking device, which should be released before using the tonearm by moving it in the direction indicated by the arrow in fig. 2.

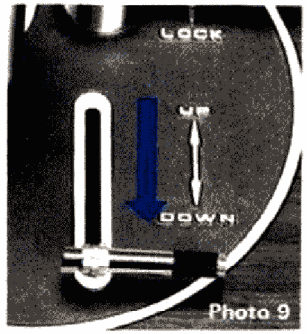


Photo 9

Fig. 2

5) Supporting the headshell and counterweight as illustrated in photo 10, turn the counterweight, moving it backward or forward, until the proper balance is achieved.

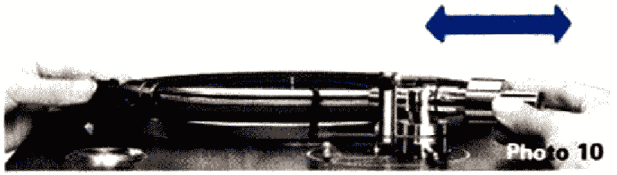


Photo 10

6) Tonearm balance is achieved when (1) the counterweight and the headshell cancel each other out; and (2) on release, the tonearm adopts the position shown in fig. 3.
The example in fig. 4 illustrates too much weight at the counterweight end of the tonearm shaft. Turning the counterweight in the direction indicated will achieve balancing.
On the other hand, the example in fig. 5 shows too little weight at the counterweight end of the tonearm shaft. Turning in a clockwise direction as illustrated will rectify this imbalance.

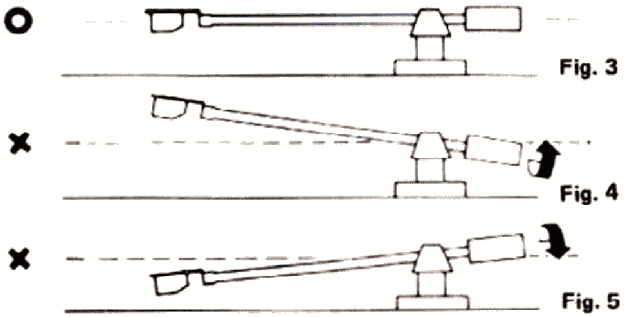


Fig. 3

Fig. 4

Fig. 5

• Lateral balancing

When the player unit is perfectly level there are no problems whatsoever regarding lateral balancing. If, however, the player is slightly tilted, the stylus becomes subject to lateral pressure similar to that of inside force. This condition results in uneven tracking force and can become a source of distortion. It is therefore of importance to achieve the correct lateral balance. Lateral balance can be achieved by following these steps:
1) Set the tracking force level to zero.
2) Plug the large lateral balance weight on to the lateral shaft as shown in photo 11.

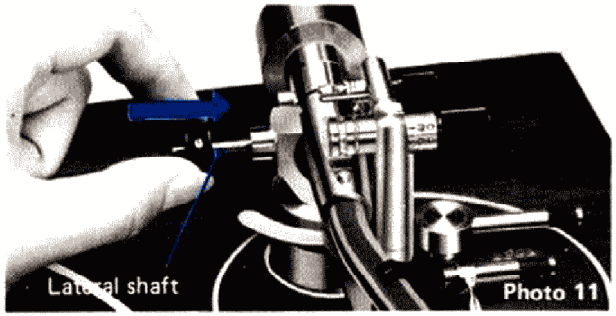


Photo 11

Photo 12

3) Raise the rear of the player unit and observe the direction in which the tonearm travels. Slide the lateral balance weight along the shaft in the same direction until the tonearm stops moving.

I) In a case such as that shown in fig. 6 when the lateral balance weight has been set at the extreme end of the lateral shaft, and yet the tonearm continues to travel in the direction shown by arrow A, correct by using both the large and the small lateral weights.

II) In a case such as that shown in fig. 7, when the large lateral balance weight has been set at the innermost point on the lateral shaft, and yet the tonearm continues to travel in the direction shown by arrow B, change to the small balance weight and re-adjust.

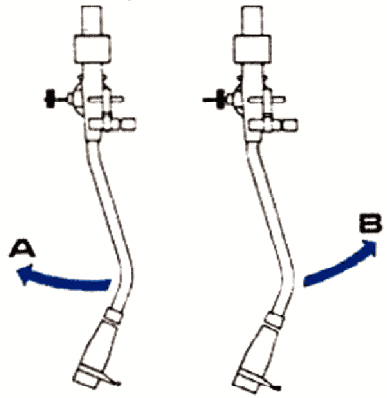


Fig. 6 Fig. 7

4) Tighten the lock screws to secure the lateral balance weight(s).

• Application of tracking force

Check to be sure that the tracking force application wire is seated into the groove on the anti-skating device shaft. Then, turn the tracking force adjustment knob and set a value to the tracking force level line which is suitable to the cartridge installed. If, for example, the cartridge to be used rates a tracking force of 1.5 grams, turn the adjustment knob until the 1.5 mark on the scale is opposite the level line (see photo 13).

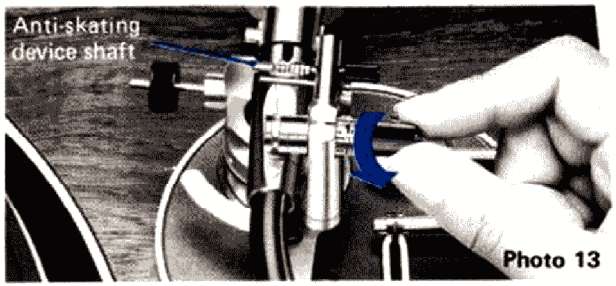


Photo 13

• Regulation of the anti-skating mechanism

The DD-40 anti-skating device can be regulated to conform with stylus tip configurations. When the cartridge to be used has an elliptical stylus, turn the anti-skating regulation knob until the red line on the shaft is aligned with that inscribed on the wire guide (see photo 14 and fig. 8). With a spherical stylus align the blue line on the shaft to that on the wire guide. Set this way, corresponding outside force is added, rendering regulation unnecessary even when the tracking force is changed.

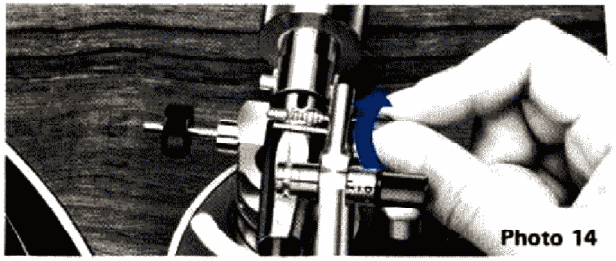


Photo 14

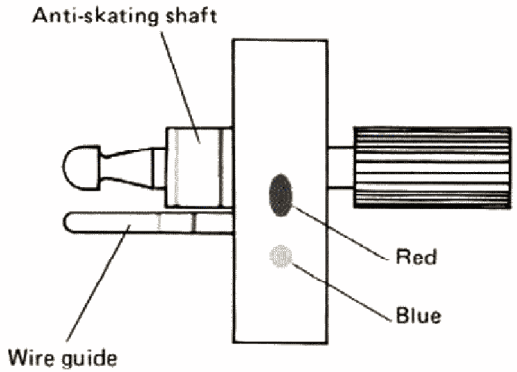


Fig. 8

• Tonearm height adjustment

It is necessary to adjust the tonearm height (in conformity with the height of the cartridge being used) until it lies at a point parallel to the record surface.

Place a record on the turntable and lower the arm lift lever. Then, watching from the right-hand side of the unit, release the arm lock lever and observe if the tonearm adopts a parallel position. (When the lock is released, the tonearm will rise to the furthest point permitted by its spring.) If the required adjustment still exceeds the height obtained by the spring, further adjust by gently pulling up the base cap.

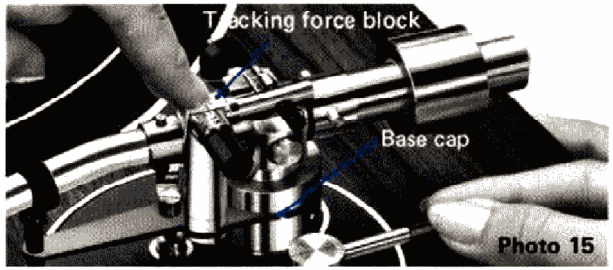
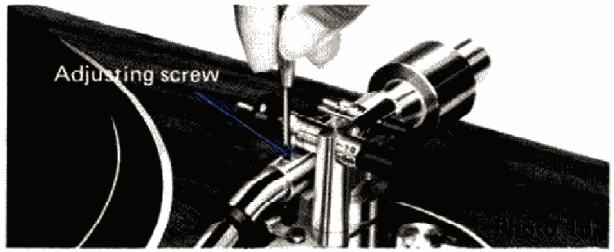


Photo 15

• Adjustment of the arm lifter operation range

The optimum distance between the stylus tip and the record surface is approximately 1 cm. Raise the arm lift lever and move the tonearm to a point above the record surface. Determine whether the distance between the stylus and the record surface is adequate. If necessary, regulate the adjusting screw as illustrated in photo 16.



In cases where an adjustment cannot be completed by means of the adjustment screws only, loosen the lifter mechanism height adjustment screws and re-adjust the height of the arm lift (see photo 17).

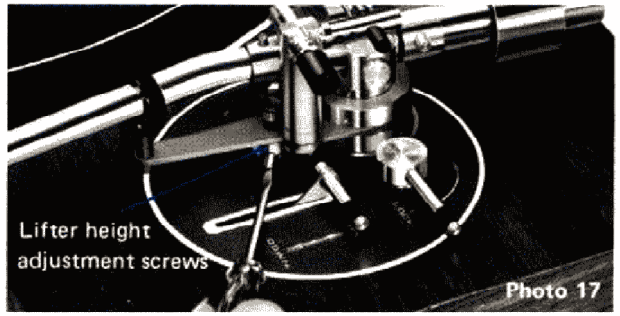


Photo 17

• Adjustment of headshell tilt

If there is headshell tilt after shell change-over, remedy this condition by loosening the clamp screws and correcting the faulty tilt as shown in photo 18.

Caution: Do not adjust or tamper with these screws unless it is necessary.

Photo 18

• Dust-cover installation

Align the metal lugs on the dust-cover to the slots at the rear of the player cabinet and locate them in the direction indicated by the arrow (photo 19).

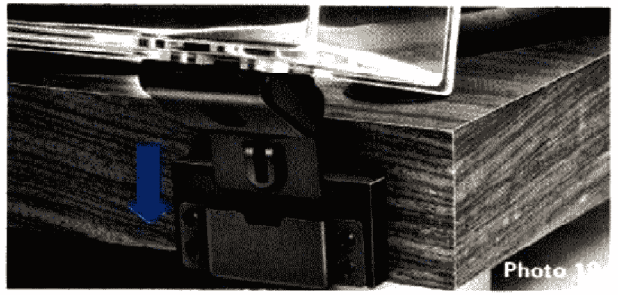
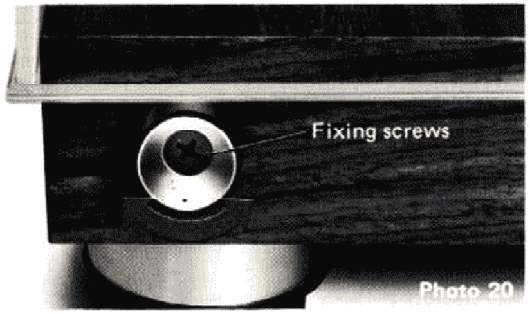


Photo 19

Amplifier and tuner connections

The dust-cover height can be adjusted by loosening the cover stops fixing screws and rotating the stops (photo 20).



• Amplifier and tuner connections

Connect the output line to the PHONO (MAG) and GND (earth) terminals on an amplifier or tuner as pictured in fig. 9.

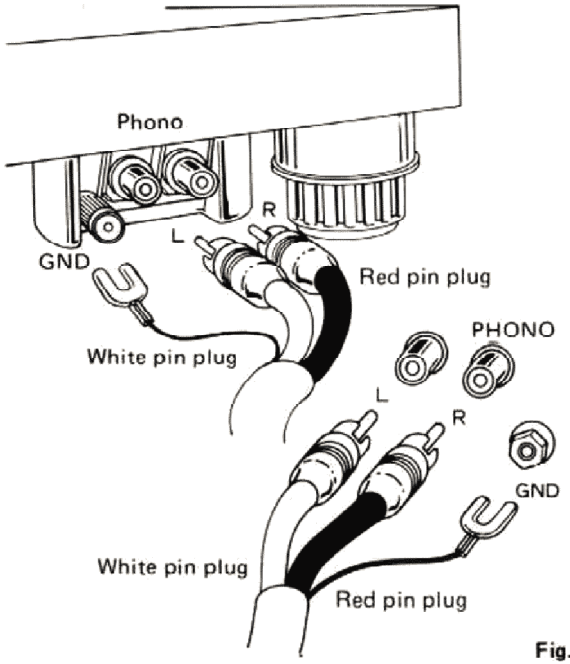


Fig. 9

Operation

• Playing a record

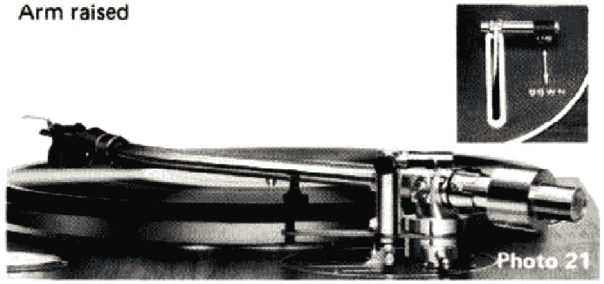
1) Place a record on the turntable and press the power button to ON.

2) Select the appropriate record speed, either 33 or 45 r.p.m. by pressing the speed change-over button.

Turn over the 45 r.p.m. adaptor to use.

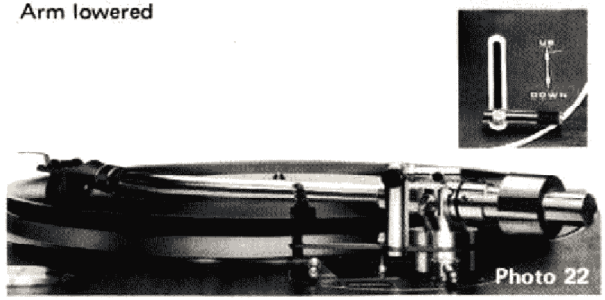
3) Raise the arm lift lever as shown in photo 21 and slide the tonearm to the desired point above the record.

Arm raised



4) Lower the arm lift lever. The tonearm will gently lower to the record surface and playback will begin (photo 22).

Arm lowered



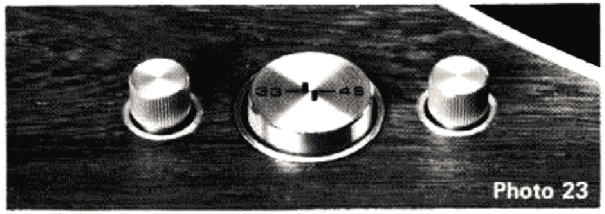
5) When the record ends raise the arm lift lever in order to raise the stylus clear of the record.

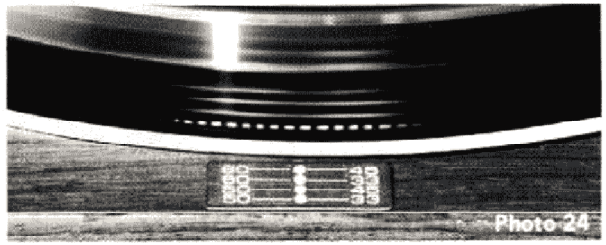
6) Return the tonearm to its rest and press the power button again to switch OFF. (After the unit is switched off, the turntable will continue to revolve for a short period, due to inertia.)

• Speed adjustment

When the platter is revolving at the correct speed, the stroboscope stripes around the perifery of the turntable platter appear, by means of the neon lamp, to be motionless. If the stripes do not remain still, adjust the speed using the fine adjustment knobs (photo 23) in accordance with the information given below.

If the stripes run to the right, the platter is revolving slower than the rated speed. Regulate by turning the adjustment knobs in a clockwise direction. When the stripes move toward the left, the platter is rotating faster than the rated speed. Remedy this by turning the adjustment knobs anti-clockwise.





• Stroboscope and power line fluctuations

Although the platter (driven by a DC servo motor which is unaffected by line frequency changes) continues to rotate at a constant speed, such power fluctuations do affect the neon lamp.

Consequently, the stroboscope stripes may occassionally appear a little unsteady. There is no need for concern, as this phenomenon does not indicate any change in platter speed.

(Note: When the player is very new, some current instability in the servo amp transistors may result in very slight speed variation, easily adjusted with the fine speed controls.)

- **Shock absorber height adjustment**

The height of the shocl absorbers should be regulated until the player is level.

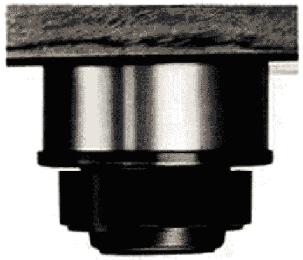


Photo 25

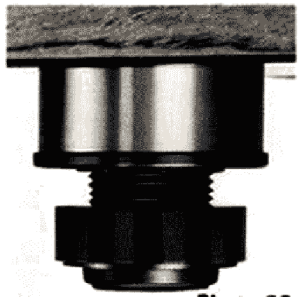


Photo 26

- **Extra headshell stand**

A convenient stand for safekeeping of spare cartridges.

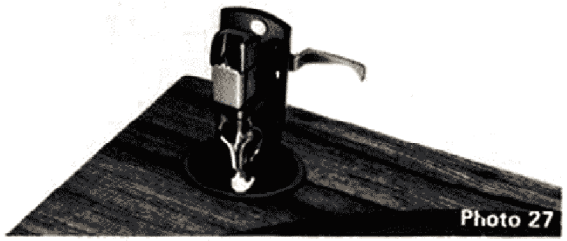


Photo 27

- **Sub-weight**

Cartridges with a weight between 4 and 10 grams can be used with this unit without additional weights. As cartridges of more than 10 grams cannot be balanced by the counterweight alone, when installing a heavier cartridge this sub-weight should be employed. (Suitable for cartridges weighing between 9.5 and 16 g.)

- **Installation of the sub-arm base**

The installation of a sub-arm base (sold separately) allows the operation of two tonearms. The operational range is 220 – 237 mm (measured from the center of the platter to the center of the arm rotation section). A special base for use with an SME 3009 arm is also available optionally.

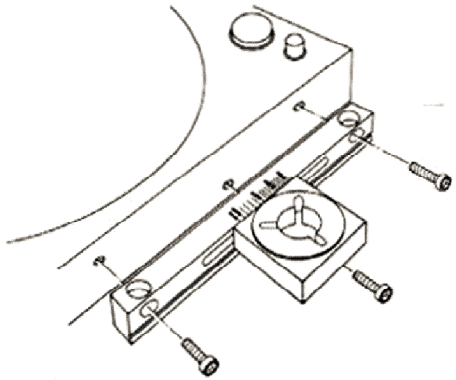


Fig. 10

- **Player location**

1 Installing the player near an amplifier, equipment using transformers, or other electromagnetic sources, will most likely cause hum during playback.

2 As installation near or on speakers, very close to a wall or other sources of vibration will encourage howling, the player should be located on a surface not subject to excessive vibration.

3 The player should be installed in a well ventilated area, out of contact with any prominent heat source which might cause the motor to overheat during periods of extended use.

4 This turntable is designed only for indoor use. No using it outdoors.

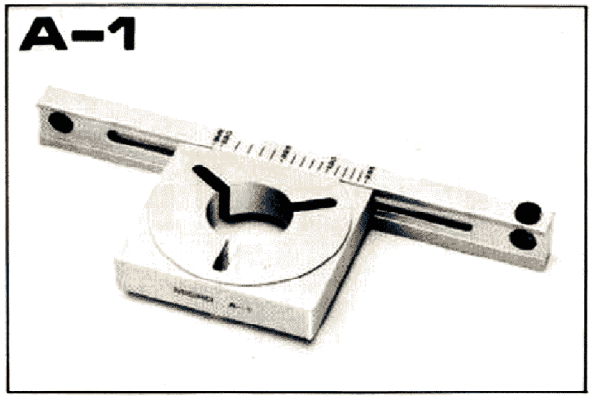
- As dirt clinging to the stylus will produce distortion and a deterioration of the sound quality, the stylus should be cleaned periodically using the stylus brush.
  (Cleaning records with a record cleaner before playing will greatly reduce the amount of dirt and dust on the stylus.)
- Avoid location in a dusty place, and when not in use, make certain the dust-cover is closed.
- The connections between the tonearm and the headshell and those on the line between the player and the amplifier can sometimes become soiled and consequently less efficient. These points should be wiped ocassionally with alcohol or carbon tetrachloride.
- As the DD-40 features a special lubricant, oiling is completely unnecessary. Lubrication with a different kind of oil can lead to damage.

Trouble-shooting

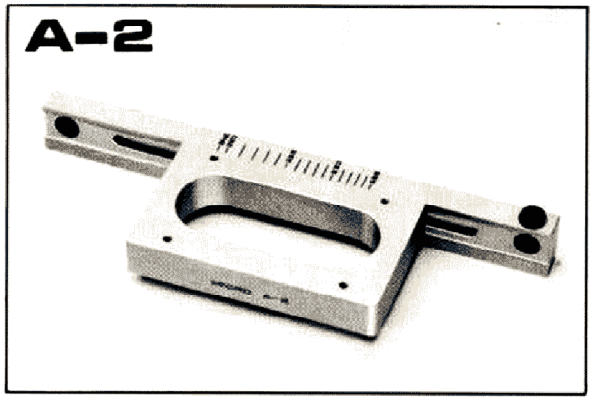
Trouble	Cause	Treatment
● Hum	● Earth line is incorrectly connected. ● Headshell is improperly locked. ● Headshell or cartridge leads are connected faultily. ● Influence from an electromagnetic source such as the tuner or amp.	● Re-connect the earth line to the earth terminal correctly. **(See section on connections)** ● Re-secure the headshell lock. **(See section on tonearm assembly)** ● See section on connection of headshell leads. ● Change location of the player.
● Platter will not detach from the center spindle.	● Platter is improperly installed on the center spindle.	● Grip the platter at both openings and lift. Gently tap the center spindle with a wooden hammer or a screwdriver handle.
● Distorted playback	● Tracking force is unsuitable to the installed cartridge. ● Dirt has collected on the stylus.	● Re-check the tracking force and balance adjustment. **(See section on tonearm adjustment)**
● Cartridge will not raise from the record even when the arm lift is operated.	● Arm lift height is incorrectly adjusted.	● Adjust height. **(See section on arm lift height adjustment.)**

DD-40 accessories

● Sub-arm bases



For use with general tonearms. Operating range 220 – 237 mm (measured from the center of the platter to the center of the arm rotation section).



For use with SME 3009 arm.

Specifications

●Motor	
Drive system	DC servo motor
Speeds	33-1/3, 45 r.p.m.
Fine speed adjustment range	±6%
Turntable platter	32 cm die-cast aluminum 1.5 kg
Power	110, 117, 220, 240 V 16.5 W
Wow and flutter	Less than 0.028%
S/N ratio	More than 62 dB
●Tonearm	
Model	Dynamic balance type
Working length	237 mm (9-5/16 inch)
Overhang	15 mm (19/32 inch)
Offset angle	21°
Maximum tracking error	Less than 1.5°
Usable cartridge weight	4 – 10 g (0.14~0.35 oz)
Cartridge weight range when sub-weight is employed	9.5 – 16 g (0.34~0.56 oz)
Range of tracking force adjustment	0 – 3 g
Dimensions	(W)497 x (D)385 x (H)154 mm (19-9/16 x 15-5/32 x 6-1/16 inch)
Weight	11.5 kg (25,4 lbs)

* Design and specifications are subject to modification without notice.